

James Bullock

List of Publications by Year in descending order

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5,661
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125106

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92
all docs

92
docs citations

92
times ranked

6463
citing authors

#	ARTICLE	IF	CITATIONS
1	Carrier-selective contacts using metal compounds for crystalline silicon solar cells. Progress in Photovoltaics: Research and Applications, 2023, 31, 380-413.	4.4	33
2	Silicon solar cells with passivating contacts: Classification and performance. Progress in Photovoltaics: Research and Applications, 2023, 31, 310-326.	4.4	12
3	Temperature-dependent performance of silicon heterojunction solar cells with transition-metal-oxide-based selective contacts. Progress in Photovoltaics: Research and Applications, 2022, 30, 981-993.	4.4	6
4	Infrared Photodetectors Based on 2D Materials and Nanophotonics. Advanced Functional Materials, 2022, 32, .	7.8	86
5	Progress and Future Prospects of Wide-Bandgap Metal-Compound-Based Passivating Contacts for Silicon Solar Cells. Advanced Materials, 2022, 34, e2200344.	11.1	30
6	Polarization-Converting Plasmonic Nanoantennas for Light Absorption Enhancement in Anisotropic 2D Black Phosphorus. , 2021, , .		0
7	Long-Wave Infrared Photodetectors Based on 2D Platinum Diselenide atop Optical Cavity Substrates. ACS Nano, 2021, 15, 6573-6581.	7.3	29
8	Light-Matter Interaction Enhancement in Anisotropic 2D Black Phosphorus via Polarization-Tailoring Nano-Optics. ACS Photonics, 2021, 8, 1120-1128.	3.2	20
9	Polysilicon passivated junctions: The next technology for silicon solar cells?. Joule, 2021, 5, 811-828.	11.7	88
10	Aluminium electrode induced surface passivation deterioration for dopant free passivated contacts. , 2021, , .		3
11	Copper Tetracyanoquinodimethane (CuTCNQ): A Metal-Organic Semiconductor for Room-Temperature Visible to Long-Wave Infrared Photodetection. ACS Applied Materials & Interfaces, 2021, 13, 38544-38552.	4.0	10
12	Visible to Short-Wave Infrared Photodetectors Based on ZrGeTe ₄ van der Waals Materials. ACS Applied Materials & Interfaces, 2021, 13, 45881-45889.	4.0	7
13	21.3%-efficient n-type silicon solar cell with a full area rear TiO _x /LiF/Al electron-selective contact. Solar Energy Materials and Solar Cells, 2020, 206, 110291.	3.0	38
14	Spectrally Selective Mid-Wave Infrared Detection Using Fabry-Pérot Cavity Enhanced Black Phosphorus 2D Photodiodes. ACS Nano, 2020, 14, 13645-13651.	7.3	41
15	Mid- to long-wave infrared computational spectroscopy with a graphene metasurface modulator. Scientific Reports, 2020, 10, 5377.	1.6	23
16	Long-Wave Infrared Photodetectors Based on Platinum Diselenide. , 2020, , .		0
17	Visible to Long-Wave Infrared Photodetectors based on Copper Tetracyanoquinodimethane (CuTCNQ) Crystals. , 2020, , .		0
18	Machine Learning Optimization of p-Type Transparent Conducting Films. Chemistry of Materials, 2019, 31, 7340-7350.	3.2	30

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19	Optical and electrical properties of two-dimensional palladium diselenide. Applied Physics Letters, 2019, 114, .	1.5	74
20	15% Efficiency Ultrathin Silicon Solar Cells with Fluorine-Doped Titanium Oxide and Chemically Tailored Poly(3,4-ethylenedioxythiophene):Poly(styrenesulfonate) as Asymmetric Heterocontact. ACS Nano, 2019, 13, 6356-6362.	7.3	53
21	In Situ Transmission Electron Microscopy Study of Molybdenum Oxide Contacts for Silicon Solar Cells. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1800998.	0.8	6
22	Dip Coating Passivation of Crystalline Silicon by Lewis Acids. ACS Nano, 2019, 13, 3723-3729.	7.3	28
23	Si photocathode with Ag-supported dendritic Cu catalyst for CO ₂ reduction. Energy and Environmental Science, 2019, 12, 1068-1077.	15.6	93
24	In Situ Transmission Electron Microscopy: A Powerful Tool for the Characterization of Carrier-Selective Contacts. , 2019, , .		0
25	Passivating contacts for crystalline silicon solar cells. Nature Energy, 2019, 4, 914-928.	19.8	374
26	Dopant-Free Partial Rear Contacts Enabling 23% Silicon Solar Cells. Advanced Energy Materials, 2019, 9, 1803367.	10.2	77
27	Mid-Infrared Computational Spectroscopy with an Electrically-Tunable Graphene Metasurface. , 2019, , .		0
28	Stable Dopant-Free Asymmetric Heterocontact Silicon Solar Cells with Efficiencies above 20%. ACS Energy Letters, 2018, 3, 508-513.	8.8	164
29	Carrier population control and surface passivation in solar cells. Solar Energy Materials and Solar Cells, 2018, 184, 38-47.	3.0	109
30	Tantalum Oxide Electron-Selective Heterocontacts for Silicon Photovoltaics and Photoelectrochemical Water Reduction. ACS Energy Letters, 2018, 3, 125-131.	8.8	127
31	Solution-Processed Transparent Self-Powered p-CuZnS/n-ZnO UV Photodiode. Physica Status Solidi - Rapid Research Letters, 2018, 12, 1700381.	1.2	54
32	Transmission Electron Microscopy Studies of Transition Metal Oxides Employed as Carrier Selective Contacts in Silicon Solar Cells. , 2018, , .		0
33	23% efficient n-type crystalline silicon solar cells with passivated partial rear contacts. , 2018, , .		1
34	Temperature and Humidity Stable Alkali/Alkaline-Earth Metal Carbonates as Electron Heterocontacts for Silicon Photovoltaics. Advanced Energy Materials, 2018, 8, 1800743.	10.2	35
35	Zirconium oxide surface passivation of crystalline silicon. Applied Physics Letters, 2018, 112, .	1.5	19
36	A Wearable Microfluidic Sensing Patch for Dynamic Sweat Secretion Analysis. ACS Sensors, 2018, 3, 944-952.	4.0	285

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37	Thermal Stability of Hole-Selective Tungsten Oxide: In Situ Transmission Electron Microscopy Study. Scientific Reports, 2018, 8, 12651.	1.6	16
38	Polarization-resolved black phosphorus/molybdenum disulfide mid-wave infrared photodiodes with high detectivity at room temperature. Nature Photonics, 2018, 12, 601-607.	15.6	366
39	Solution-Synthesized High-Mobility Tellurium Nanoflakes for Short-Wave Infrared Photodetectors. ACS Nano, 2018, 12, 7253-7263.	7.3	298
40	Electrical tuning of reflectance of graphene metasurface for unpolarized long wavelength infrared light. , 2018, , .		0
41	A Low Resistance Calcium/Reduced Titania Passivated Contact for High Efficiency Crystalline Silicon Solar Cells. Advanced Energy Materials, 2017, 7, 1602606.	10.2	97
42	Mid-Wave Infrared Photoconductors Based on Black Phosphorus-Arsenic Alloys. ACS Nano, 2017, 11, 11724-11731.	7.3	184
43	Efficient solar-driven electrochemical CO ₂ reduction to hydrocarbons and oxygenates. Energy and Environmental Science, 2017, 10, 2222-2230.	15.6	145
44	Microchannel contacting of crystalline silicon solar cells. Scientific Reports, 2017, 7, 9085.	1.6	8
45	Calcium contacts to n-type crystalline silicon solar cells. Progress in Photovoltaics: Research and Applications, 2017, 25, 636-644.	4.4	60
46	Conductive and Stable Magnesium Oxide Electron-Selective Contacts for Efficient Silicon Solar Cells. Advanced Energy Materials, 2017, 7, 1601863.	10.2	174
47	Superacid-Treated Silicon Surfaces: Extending the Limit of Carrier Lifetime for Photovoltaic Applications. IEEE Journal of Photovoltaics, 2017, 7, 1574-1583.	1.5	40
48	Metal Nanoparticle Hole Contacts for Silicon Solar Cells. , 2017, , .		0
49	Down Shifted Conversion for Enhanced HIT Solar Cell Efficiency. , 2017, , .		0
50	Photovoltaic Smart Home System - Dubai Case Study. , 2017, , .		1
51	Non-Destructive Contact Resistivity Measurements on Solar Cells Using the Circular Transmission Line Method. , 2017, , .		7
52	Nonlinear Response of Silicon Solar Cells. , 2017, , .		1
53	Low resistance Ohmic contact to p-type crystalline silicon via nitrogen-doped copper oxide films. Applied Physics Letters, 2016, 109, .	1.5	21
54	Characterisation of sputtering deposited amorphous silicon films for silicon heterojunction solar cells. , 2016, , .		1

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55	Survey of dopant-free carrier-selective contacts for silicon solar cells. , 2016, , .		12
56	A magnesium/amorphous silicon passivating contact for n -type crystalline silicon solar cells. Applied Physics Letters, 2016, 109, .	1.5	44
57	Magnesium fluoride based electron-selective contact. , 2016, , .		0
58	Passivating contacts for silicon solar cells based on boron-diffused recrystallized amorphous silicon and thin dielectric interlayers. Solar Energy Materials and Solar Cells, 2016, 152, 73-79.	3.0	81
59	Wearable Microsensor Array for Multiplexed Heavy Metal Monitoring of Body Fluids. ACS Sensors, 2016, 1, 866-874.	4.0	297
60	Superacid Passivation of Crystalline Silicon Surfaces. ACS Applied Materials & Interfaces, 2016, 8, 24205-24211.	4.0	38
61	Low resistance TiO ₂ -passivated calcium contacts to for crystalline silicon solar cells. , 2016, , .		2
62	Efficient silicon solar cells with dopant-free asymmetric heterocontacts. Nature Energy, 2016, 1, .	19.8	461
63	Magnesium Fluoride Electron-Selective Contacts for Crystalline Silicon Solar Cells. ACS Applied Materials & Interfaces, 2016, 8, 14671-14677.	4.0	188
64	Lithium Fluoride Based Electron Contacts for High Efficiency n -Type Crystalline Silicon Solar Cells. Advanced Energy Materials, 2016, 6, 1600241.	10.2	134
65	Chemical Bath Deposition of p-Type Transparent, Highly Conducting (CuS) _x :(ZnS) _{1-x} Nanocomposite Thin Films and Fabrication of Si Heterojunction Solar Cells. Nano Letters, 2016, 16, 1925-1932.	4.5	89
66	Passivation of c-Si surfaces by sub-nm amorphous silicon capped with silicon nitride. Applied Physics Letters, 2015, 107, .	1.5	9
67	Silicon nitride/silicon oxide interlayers for solar cell passivating contacts based on PECVD amorphous silicon. Physica Status Solidi - Rapid Research Letters, 2015, 9, 617-621.	1.2	15
68	Proof-of-concept p-type silicon solar cells with molybdenum oxide partial rear contacts. , 2015, , .		3
69	Proof-of-Concept p-Type Silicon Solar Cells With Molybdenum Oxide Local Rear Contacts. IEEE Journal of Photovoltaics, 2015, 5, 1591-1594.	1.5	49
70	Skin care for healthy silicon solar cells. , 2015, , .		57
71	Nanoporous Silicon Produced by Metal-Assisted Etching: A Detailed Investigation of Optical and Contact Properties for Solar Cells. IEEE Journal of Photovoltaics, 2015, 5, 538-544.	1.5	4
72	Phosphorus-diffused polysilicon contacts for solar cells. Solar Energy Materials and Solar Cells, 2015, 142, 75-82.	3.0	147

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73	Passivation of c-Si surfaces by ALD tantalum oxide capped with PECVD silicon nitride. Solar Energy Materials and Solar Cells, 2015, 142, 42-46.	3.0	34
74	Tantalum oxide/silicon nitride: A negatively charged surface passivation stack for silicon solar cells. Applied Physics Letters, 2015, 106, .	1.5	26
75	Grown-in defects limiting the bulk lifetime of <i>p</i> -type float-zone silicon wafers. Journal of Applied Physics, 2015, 117, .	1.1	48
76	Passivated contacts to laser doped p+ and n+ regions. Solar Energy Materials and Solar Cells, 2015, 140, 38-44.	3.0	9
77	Simple silicon solar cells featuring an a-Si:H enhanced rear MIS contact. Solar Energy Materials and Solar Cells, 2015, 138, 22-25.	3.0	24
78	High efficiency n-type silicon solar cells featuring passivated contact to laser doped regions. Applied Physics Letters, 2015, 106, .	1.5	13
79	Degradation of the surface passivation of plasma-assisted ALD Al ₂ O ₃ under damp-heat exposure. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 274-281.	0.8	14
80	n- and p-type silicon Solar Cells with Molybdenum Oxide Hole Contacts. Energy Procedia, 2015, 77, 446-450.	1.8	62
81	Contact Resistivity of Evaporated Al Contacts for Silicon Solar Cells. IEEE Journal of Photovoltaics, 2015, 5, 1304-1309.	1.5	8
82	Molybdenum oxide MoO _x : A versatile hole contact for silicon solar cells. Applied Physics Letters, 2014, 105, .	1.5	279
83	Damp and dry heat degradation of thermal oxide passivation of <i>p</i> + silicon. Journal of Applied Physics, 2014, 115, .	1.1	3
84	Passivated contacts to n ⁺ and p ⁺ silicon based on amorphous silicon and thin dielectrics. , 2014, , .		10
85	Amorphous silicon enhanced metal-insulator-semiconductor contacts for silicon solar cells. Journal of Applied Physics, 2014, 116, .	1.1	26
86	Development of a self-aligned etch-back process for selectively doped silicon solar cells. , 2014, , .		4
87	Reactive ion etched black silicon texturing: A comparative study. , 2014, , .		11
88	Amorphous silicon passivated contacts for diffused junction silicon solar cells. Journal of Applied Physics, 2014, 115, .	1.1	44
89	Passivation of aluminium-n+silicon contacts for solar cells by ultrathin Al ₂ O ₃ and SiO ₂ dielectric layers. Physica Status Solidi - Rapid Research Letters, 2013, 7, 946-949.	1.2	37
90	Enhanced rear-side reflection and firing-stable surface passivation of silicon solar cells with capping polymer films. Physica Status Solidi - Rapid Research Letters, 2013, 7, 530-533.	1.2	3

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91	Humidity degradation and repair of ALD Al ₂ O ₃ passivated silicon. , 2013, , .		1
92	The Mechanical and Photochemical Properties of Titania Coated Silica Nanowires. ECS Journal of Solid State Science and Technology, 2012, 1, Q114-Q118.	0.9	1